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### The Emerging Genre of Data Comics

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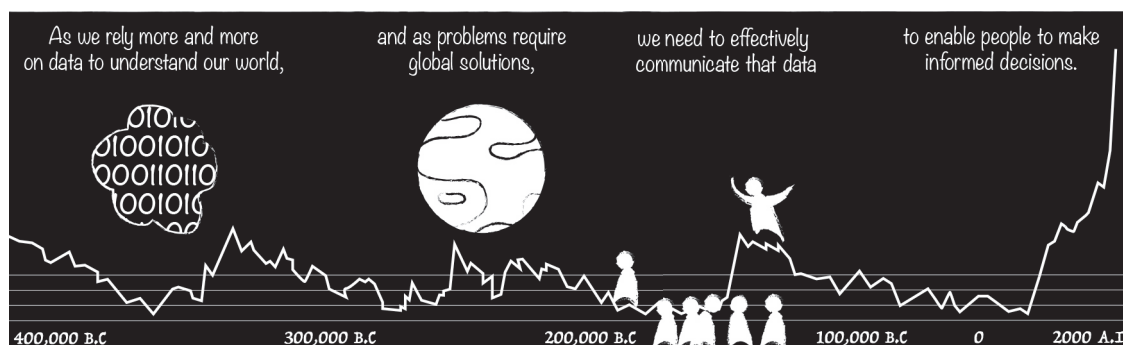
## The Emerging Genre of Data Comics

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*Microsoft Research*

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*University of Calgary*

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*Harvard University*



Visualizations can be effective in showing data, but a single picture alone may not be able to explain nor to engage an audience in decoding a message.

How do we engage an audience?

How do we break down complexity?

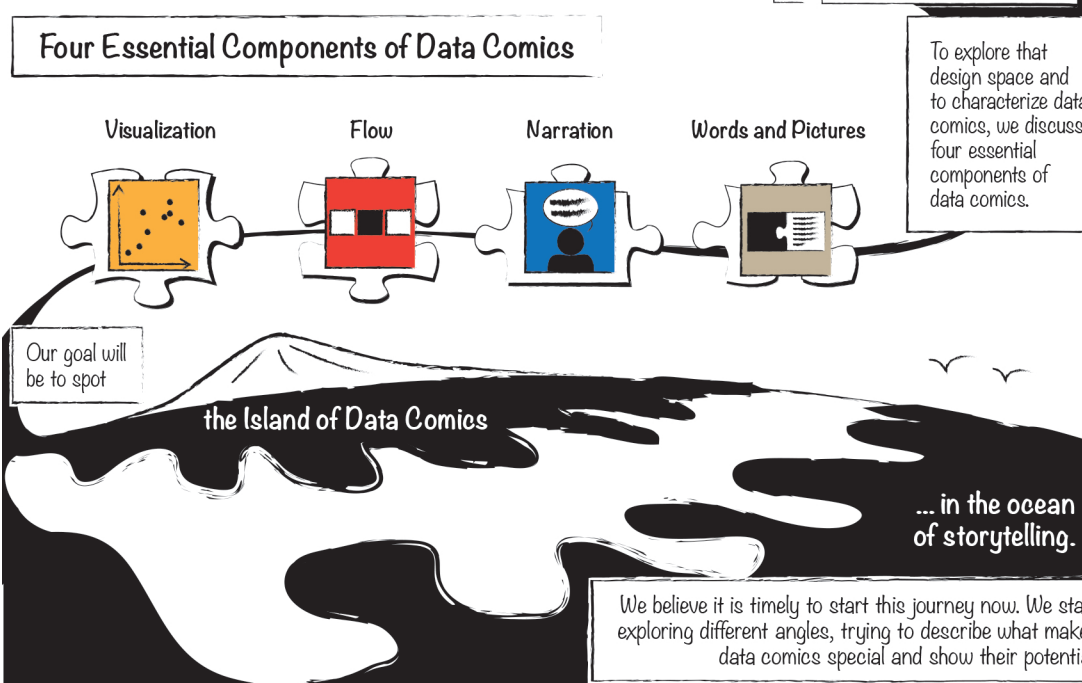
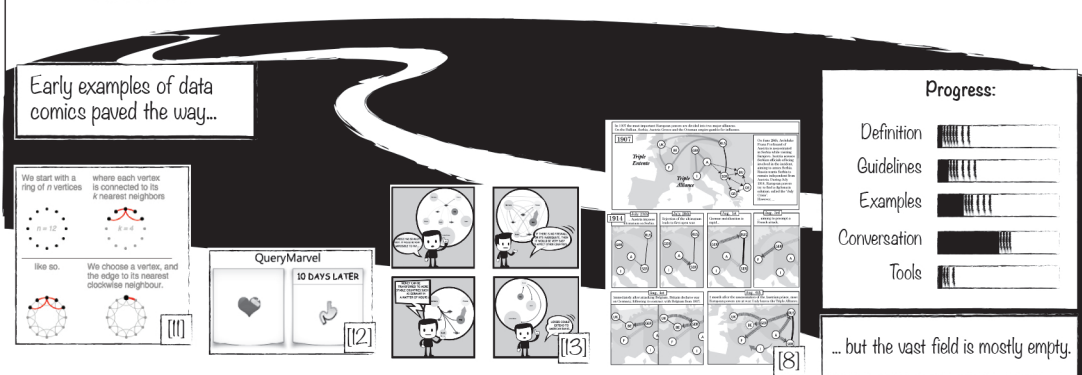
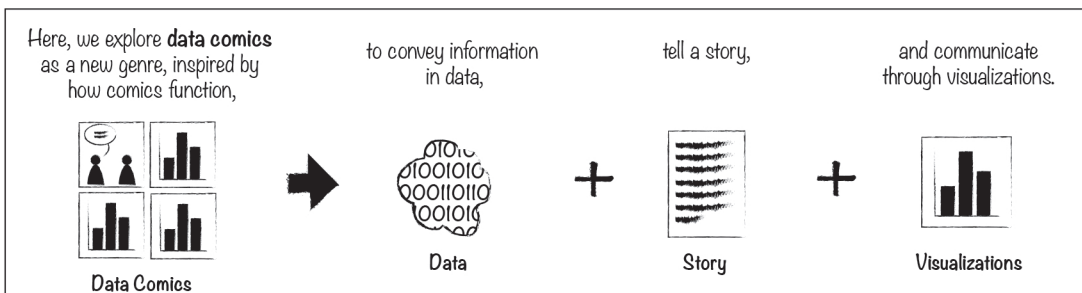
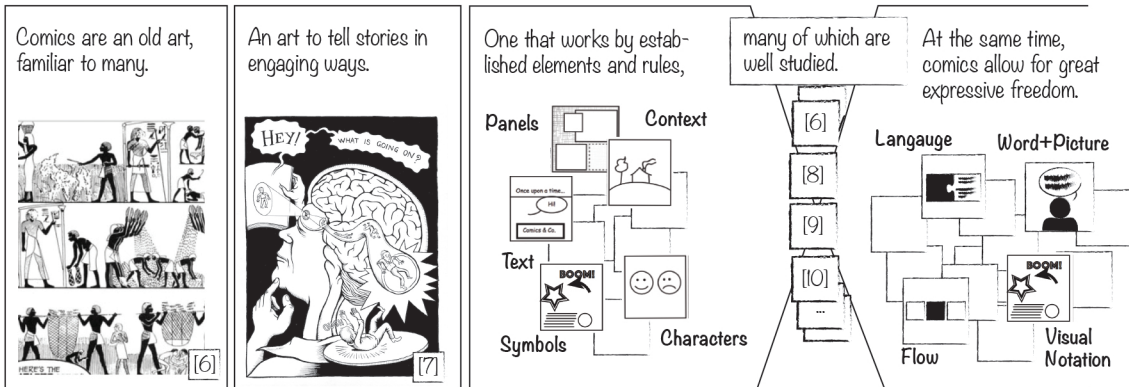
How do we guide the audience?

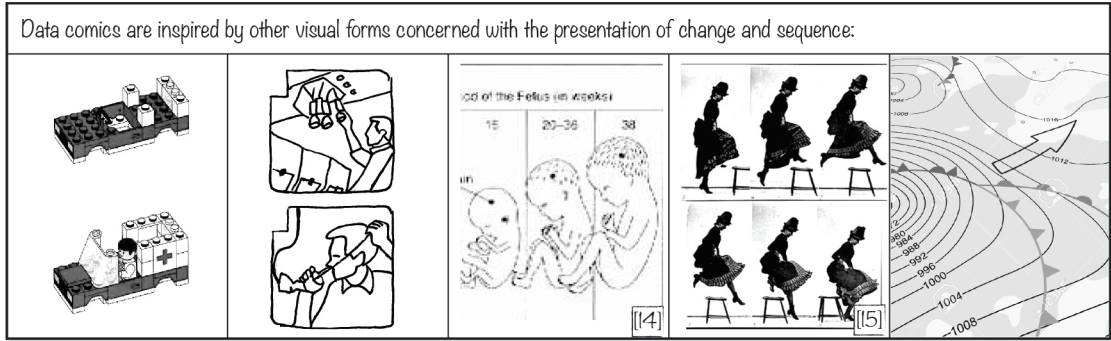
There are many ways of data-driven storytelling:

One of them being comics.

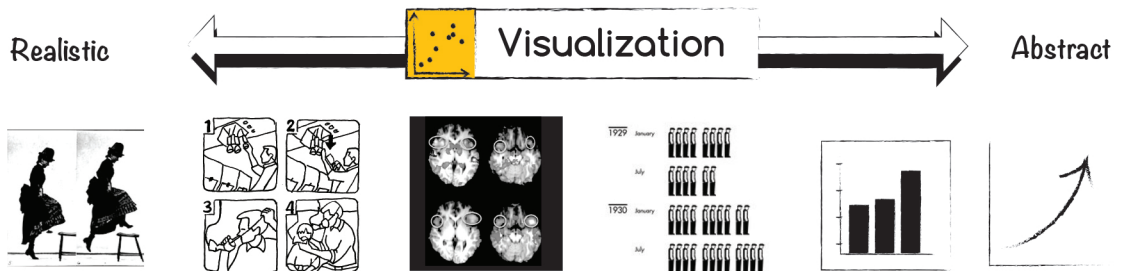
Although comics are familiar to everyone, they are vastly underexplored for data-driven storytelling.

This comic presents our viewpoint on **data comics** and how to leverage comics to tell stories with data.





We call this component **visualization**, ranging from iconic **realistic** pictures to **abstract** and conceptual visualizations.



While all of these pictures are visualizations, not all of them show **data**.

Data visualizations provide a visual form to something otherwise **invisible**.

In fact, data does not actually have to exist,

nor can we be sure the representation is true.

Data comics can vary in style and detail to support a message

or use alternative representations to highlight a different point.

Node-Link Diagram

One central node.

Adjacency Matrix

Many missing connections.

A chosen visualization must fit the data, but

most importantly, it must be understood by readers,

even those who have never seen a visualization.

Data visualizations are designed to allow for a variety of discoveries and insights:

trends

relations

comparisons

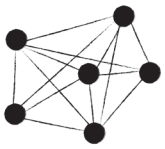
distributions,

which eventually will be shown to the audience.

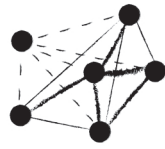
Other labels in the diagram include: outliers, clusters, change, and Bertin.



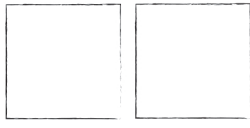
In storytelling, it is important that people understand the presented content easily,



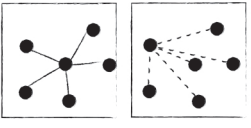
especially when data and visualizations are complex.



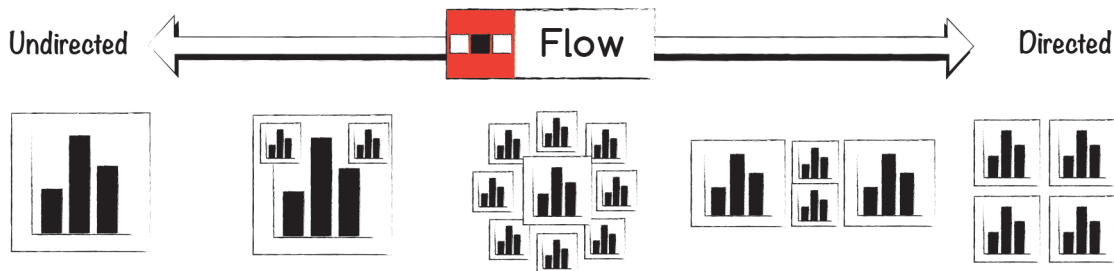
Yet, comics offer a fascinating and simple way:




one message per panel.



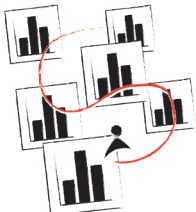
We call this component **flow**, ranging from an **undirected** nonexplicit flow to a **directed** flow indicated by the order of the panels.



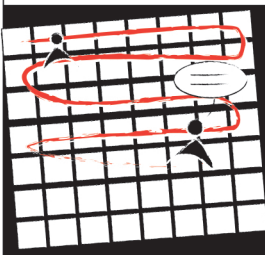
No reading order requires readers to explore by themselves.




Comics can explain complex processes by splitting them into less complex units.



Linear order provides **guidance** and aids argumentation.


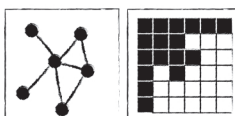


This requires **transition**.

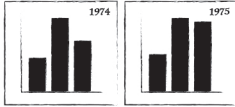
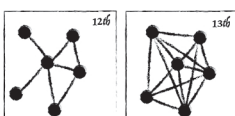


For example:

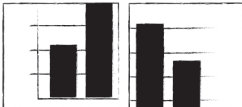
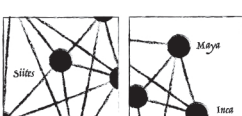
**Visualization-to-Visualization**

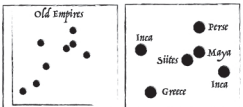
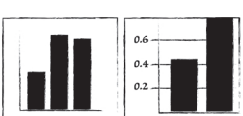
**Moment-to-Moment**

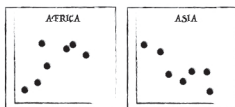
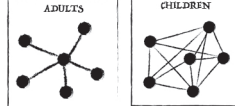
**Detail-to-Detail**



**Level-of-Detail**

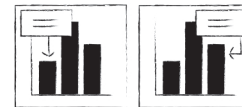
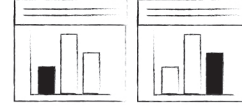
**Data-to-Data**


**Visualization-to-Context**

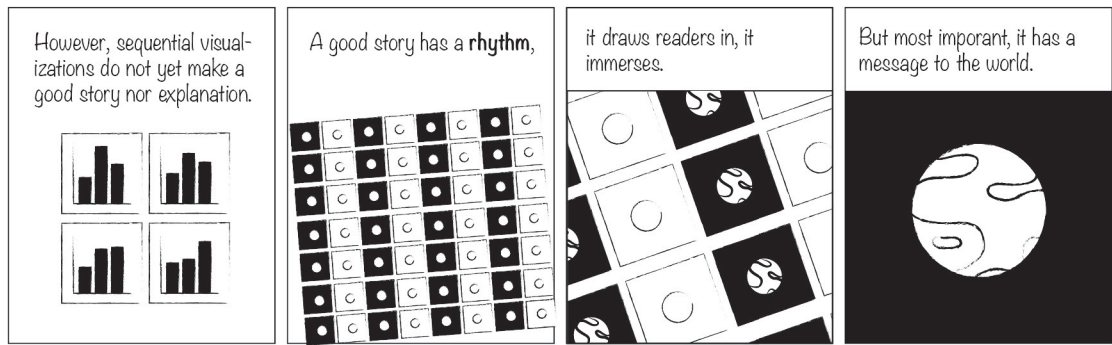



**Message-to-Message**

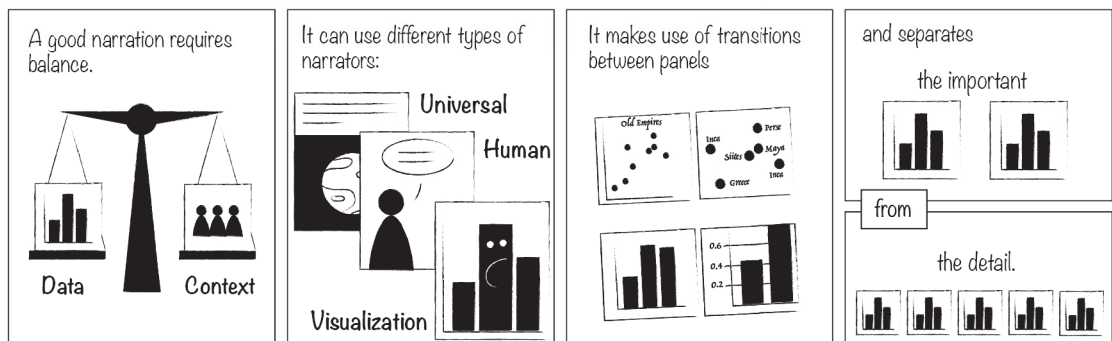
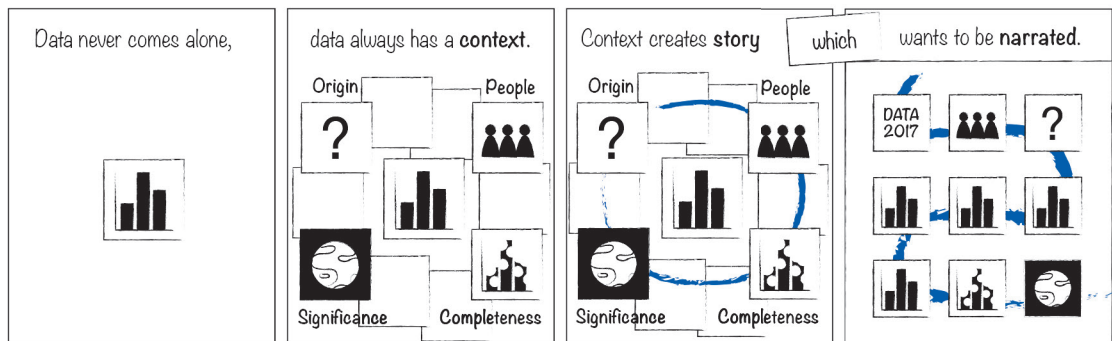
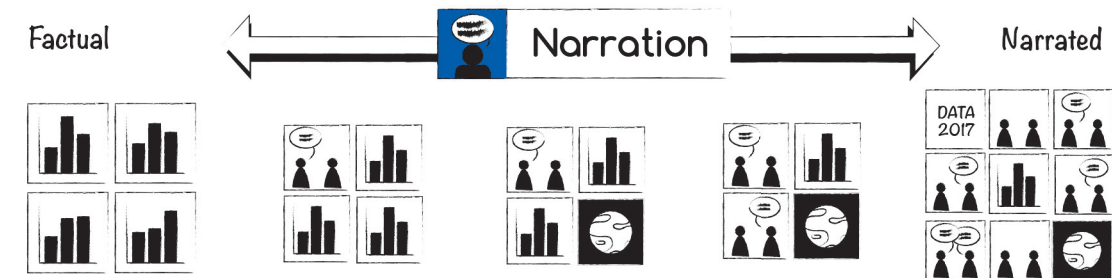



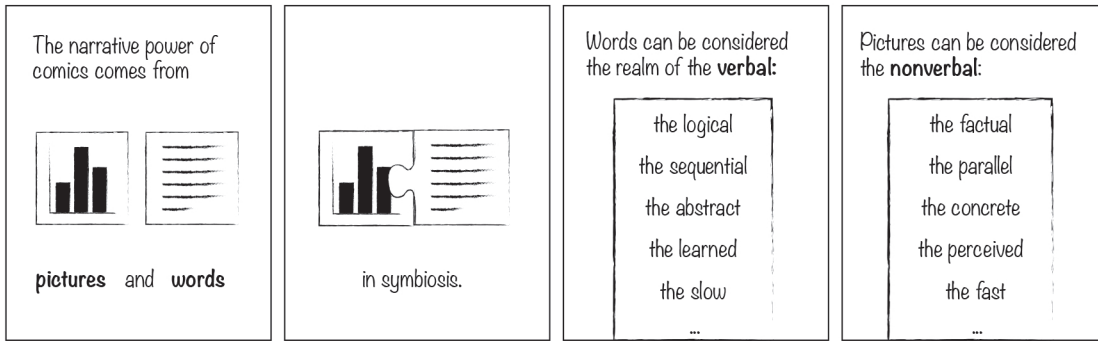
But sometimes, a linear order is not desired or just too simple.



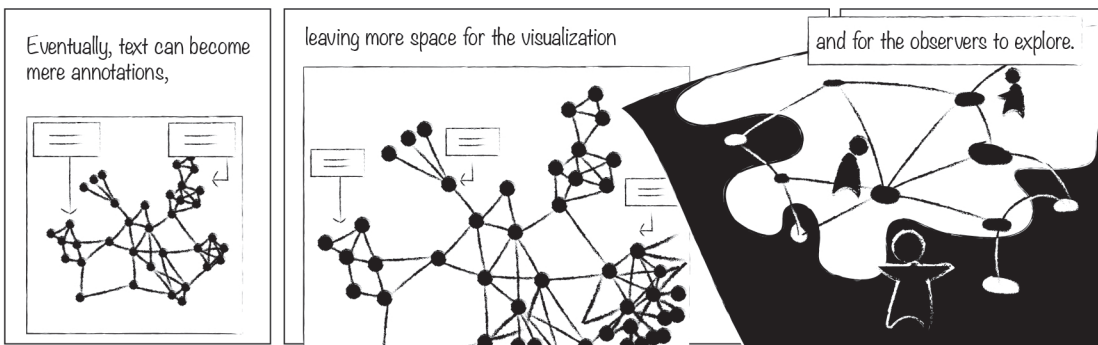
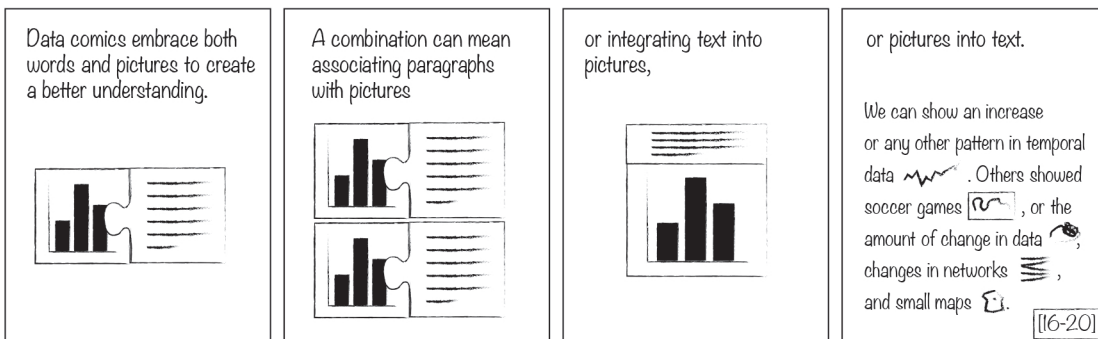
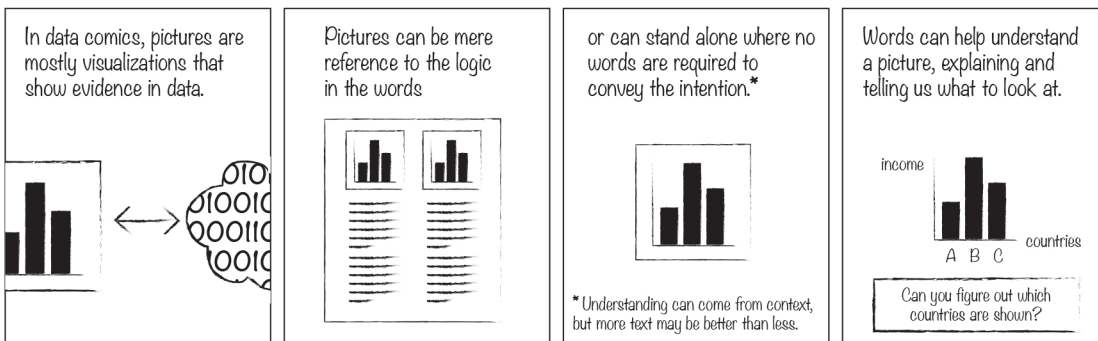
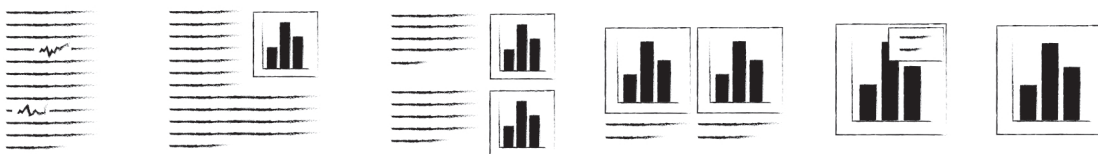


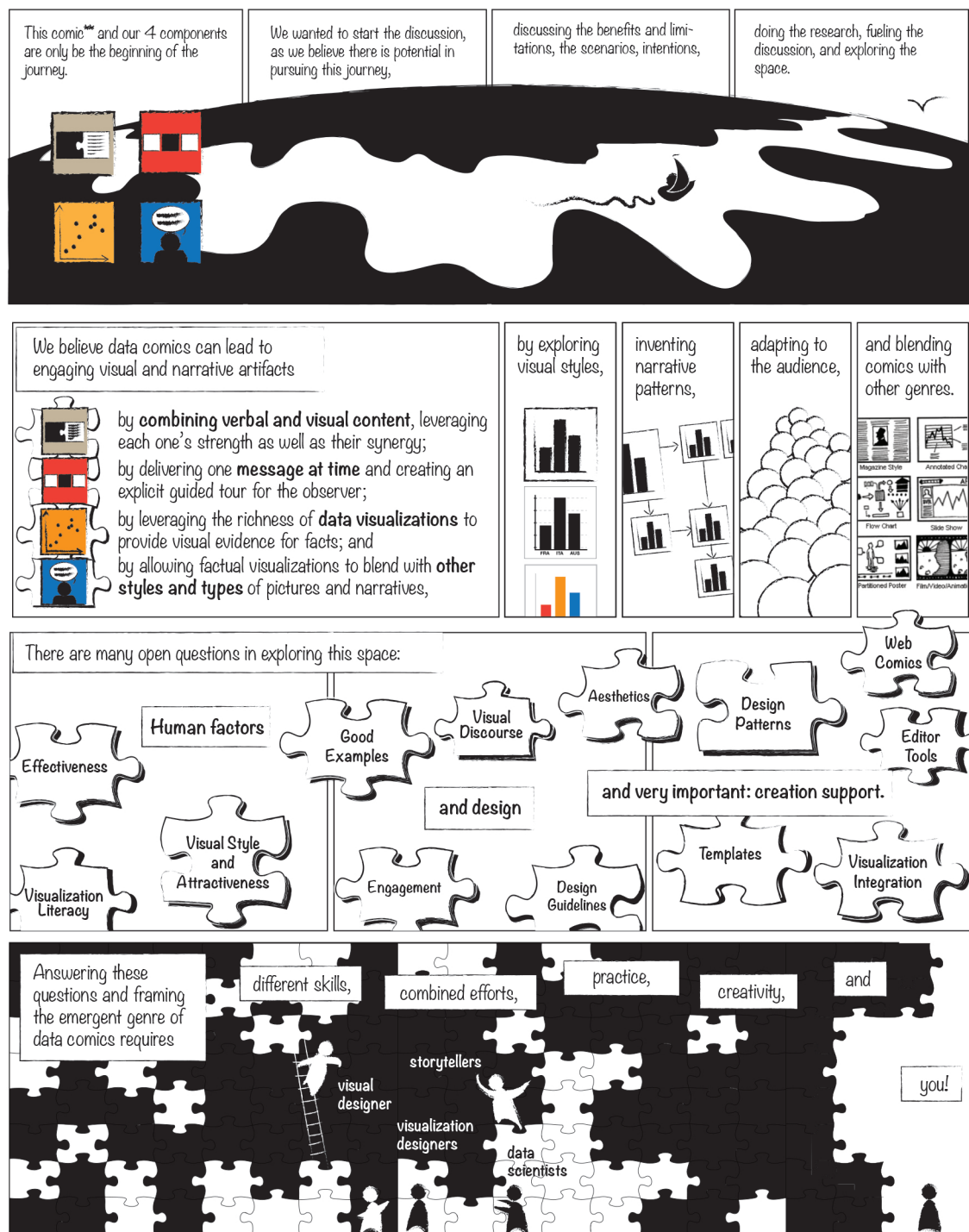
We call this component **narration**, ranging from **factual** arrays of visualizations to richly **narrated** graphic novels.





We call this component **Word and Picture**, ranging from almost entirely **verbal**, to **nonverbal** and visual.





<sup>\*\*\*</sup> This is **not** a data comic, as it does not tell a story about data. It is an homage to Scott McCloud [6].

www.datacomics.net

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## Editor's Note

The authors behind this special Art on Graphics department article—Benjamin Bach, Nathalie Henry Riche, Sheelagh Carpendale, and Hanspeter Pfister—also contributed this issue’s cover image. See the About the Cover profile article, “Stories in the Data,” for more details about their motivation, creative process, and attempts to leverage the massive untapped potential for data-driven comics to explain multiple threads of simultaneous data.

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